

What is claimed is:

1. A motor vehicle dashboard for a motor vehicle, said motor vehicle dashboard comprising:

a frame structure, said frame structure being configured to be attached to a motor vehicle body;

a first element;

said first element comprising a first attachment side and a second attachment side opposite said first attachment side;

said first attachment side of said first element being configured to be adhered to said frame structure of said motor vehicle dashboard;

said first element comprising a first, non-crosslinked, foam, material;

a second element;

said second element comprising a first side being configured to be exposed towards the interior of a motor vehicle, and a second, attachment, side opposite said first side of said second element;

said second element comprising a second material different from said first material of said first element;

said second, attachment, side of said second element being adhered to said second attachment side of said first element;

said first material and said second material forming a composite material;

said first attachment side of said first element adhering to said frame structure of said motor vehicle dashboard; and

at least a portion of said first side of said second element being

configured to be exposed towards the interior of a motor vehicle.

2. The dashboard according to claim 1, wherein said first, foam, material comprises a one-piece, foam, material.

3. The dashboard according to claim 2, including at least one of: (a), (b), and (c), wherein (a), (b), and (c) comprise:

(a) said first element and said second element are adhered to one another by at least one of: welding and adhesion,

(b) at least one of: said first, foam, material, and said second material, comprises greater than about 5% solid by weight, and

(c) said second material comprises at least one of: a textile material, a woven material, and a fleece material.

4. A structure comprising a foam material, said structure comprising, such as, one of: a motor vehicle dashboard, an instrument panel for a motor vehicle, an instrument panel structure for a motor vehicle, a bolster component for a motor vehicle, a body side molding for a motor vehicle, a trim portion for a motor vehicle, an armrest for a motor vehicle, a covered component for a motor vehicle, a covering for a door of a motor vehicle, a covering for an A-pillar, or a B-pillar, or a C-pillar for a motor vehicle, a protective strip for a motor vehicle, a sun visor for a motor vehicle, a covering for a door, a seat for a child, a pouch, a bag, a case, a case for a pair of glasses, a protective covering structure for an in-floor heating system, a knee

pillow configured to protect knees against hard surfaces, and an insulating mat configured to insulate heated surfaces;

said structure comprising:

a support member;

a first element;

said first element comprising a first attachment side and a second attachment side opposite said first attachment side;

said first attachment side of said first element being configured to be adhered to said support member;

said first element comprising a first, non-crosslinked, foam, material;

a second element;

said second element comprising a first side being configured to be exposed, and a second, attachment, side opposite said first side of said second element;

said second element comprising a second material different from said first material of said first element;

said second, attachment, side of said second element being adhered to said second attachment side of said first element;

said first material and said second material forming a composite material; and

said first attachment side of said first element adhering to said support member.

5. The structure according to claim 4, wherein said first, foam, material comprises a one-piece, foam, material.

6. The structure according to claim 5, including at least one of: (a), (b), and (c), wherein (a), (b), and (c) comprise:

(a) said first element and said second element are adhered to one another by at least one of: welding and adhesion,

(b) at least one of: said first, foam, material, and said second material, comprises greater than about 5% solid by weight, and

(c) said second material comprises at least one of: a textile material, a woven material, and a fleece material.

7. A method of making a structure comprising a foam material, said structure comprising, such as, one of: a motor vehicle dashboard, an instrument panel for a motor vehicle, an instrument panel structure for a motor vehicle, a bolster component for a motor vehicle, a body side molding for a motor vehicle, a trim portion for a motor vehicle, an armrest for a motor vehicle, a covered component for a motor vehicle, a covering for a door of a motor vehicle, a covering for an A-pillar, or a B-pillar, or a C-pillar for a motor vehicle, a protective strip for a motor vehicle, a sun visor for a motor vehicle, a covering for a door, a seat for a child, a pouch, a bag, a case, a case for a pair of glasses, a protective covering structure for an in-floor heating system, a knee pillow configured to protect knees against hard surfaces, and an insulating mat configured to insulate heated surfaces;

said structure comprising:

a support member;

a first element;

said first element comprising a first attachment side and a second attachment side opposite said first attachment side;

said first attachment side of said first element being configured to be adhered to said support member;

said first element comprising a first, non-crosslinked, foam, material;

a second element;

said second element comprising a first side being configured to be exposed, and a second, attachment, side opposite said first side of said second element;

said second element comprising a second material different from said first material of said first element;

said second, attachment, side of said second element being adhered to said second attachment side of said first element;

said first material and said second material forming a composite material; and

said first attachment side of said first element adhering to said support member;

said method comprising the steps of:

forming said first element of said first, non-crosslinked foam, material, said forming of said first element comprising forming said first element with said first attachment side and said second attachment side opposite said first attachment side of said first element;

forming said second element of said second material, said

forming of said second element comprising forming of said first side and said second, attachment, side opposite said first side of said second element;

adhering said first element with said second attachment side of said first element to said second, attachment, side of said second element and forming said composite material;

forming said composite material into a predetermined shape;

providing said support member; and

adhering said first attachment side of said first element to said support member.

8. The method of making a structure according to claim 7, wherein:

said forming of said composite material into a predetermined shape comprises heating and shaping of said composite material.

9. The method of making a structure according to claim 8, wherein said heating and shaping of said composite material comprises embossing said first side of said second element to provide the appearance of leather to said first side of said second element.

10. The method of making a structure according to claim 7, wherein:

said forming of said composite material into a predetermined shape further comprises molding of said composite material in a mold.

11. The method of making a structure according to claim 10, wherein:

said molding comprises shaping at least a portion of said second element into a bent portion.

12. The method of making a structure according to claim 7, wherein:

said first element comprises an extruded, non-crosslinked, polypropylene, foam having a melt strength of at least 5 centi-Newtons, at a temperature of 200 degrees Celsius, at an output of 1 cubic centimeter per minute, while pressing a polypropylene melt from a container into a nozzle that has an opening width of 1 millimeter and a length of 20 millimeters, grasping and removing a polypropylene melt strand with increasing acceleration from the nozzle while measuring the tensile force until tearing off the strand of polypropylene;

said second element comprises at least one of: polypropylene, a thermoplastic polyolefin, a textile material, a woven material, and a fleece material;

said second element having a weight of at least 120 grams per square meter; and

said method further comprising at least one of: (a) and (b), wherein (a) and (b) comprise:

(a) laminating said first element and second element to one another, and

(b) welding said first element and said second element to

one another.

13. The method of making a structure according to claim 12, wherein:

at least one of: said first element and said second element comprises greater than about 5% solid by weight.

14. The method of making a structure according to claim 13, including one of: (a), (b), and (c), wherein (a), (b), and (c) comprise:

(a) said extruded, non-crosslinked, polypropylene, foam comprises at least one of: (i.), (ii.), and (iii.), wherein (i.), (ii.), and (iii.) comprise:

(i.) high melt strength polypropylene,

(ii.) a mixture of polypropylene copolymer and polypropylene homopolymer, said mixture comprising polypropylene in the range of from about 5% to about 70% by weight based on the total amount of plastic, and

(iii.) substantially only polypropylene homopolymer;

(b) said extruded, non-crosslinked, polypropylene, foam comprises foam having at least one of: (i.), (ii.), (iii.), (iv.), (v.), and (vi.), wherein (i.), (ii.), (iii.), (iv.), (v.), and (vi.) comprise:

(i.) a cell size of from about 0.4 to about 4 millimeters,

(ii.) a cell size of from about 0.5 to about 1.5 millimeters,

(iii.) a thickness of from about 0.5 to about 10 millimeters,

(iv.) a thickness of from about 2 to about 4 millimeters,

(v.) a specific gravity of from about 20 to about 400



kilograms per cubic meter, and

(vi.) a specific gravity of from about 30 to about 150 per cubic meter; and

(c) said polypropylene foam comprises an extruded, one-piece, foam having a predetermined thickness.

15. The method of making a structure according to claim 14, including at least one of: (a), (b), (c), (d), (e), (f), (g), (h), (i), (j), (k), (l), (m), (n), (o), (p), (q), (r), and (s), wherein (a), (b), (c), (d), (e), (f), (g), (h), (i), (j), (k), (l), (m), (n), (o), (p), (q), (r), and (s) comprise:

(a) said composite material comprises at least one mixture of materials, said at least one mixture of materials comprising a predetermined amount of plastic material and a predetermined amount of non-plastic, filler, material;

(b) said composite material has a resistance to remelting at a temperature of from about 155 to about 165 degrees Celsius;

(c) joining said second attachment side of said first element and said second, attachment, side of said second element of said composite material to one another upon heating to a temperature that is at most about 20 degrees Celsius below the melting temperature of said composite material to effectuate one of: laminating and welding;

(d) applying said extruded, non-crosslinked, polypropylene, foam directly as a foam onto said second element of said composite material;

(e) extruding said second element onto said extruded, non-crosslinked, polypropylene, foam;

(f) said first element has a melting point of one of: (i) and (ii.), wherein (i) and (ii.) comprise:

(i) greater than about 155 degrees Celsius, and

(ii) greater than about 165 degrees Celsius, and

said second element of said composite material has a heat resistance of from about 140 to about 180 degrees Celsius.

(g) moving said first element against a heated second element by one of: prior to calendering and after calendering;

(h) adhering said composite material to said support member by one of: molding, laminating, and welding;

(i) one of: (1) and (2), wherein (1) and (2) comprise:

(1) heating and shaping said composite material prior to adhering said composite material to said support member, and

(2) heating and shaping said composite material while adhering said composite material to said support member;

(j) heating and shaping said composite material in a mold that is subjected to at least one of: a positive pressure and a negative pressure;

(k) heating said composite material to one of: (i), (ii), and (iii), wherein (i), (ii), and (iii) comprise:

- (i) the shaping temperature of said composite material,
- (ii) the welding temperature of said composite material, and
- (iii) the laminating temperature of said composite material;

said heating comprising one of: (1) and (2), wherein (1) and (2) comprise:

- (1) heating said composite material in a furnace within the corresponding mold, and

- (2) heating said composite material in a furnace exteriorly of the corresponding mold;

(l) heating and shaping said composite material; and further heating said composite material to one of: (1) and (2), wherein (1) and (2) comprise:

- (1) the welding temperature of said composite material, and
- (2) the laminating temperature of said composite material,

said further heating comprising using heat generated during said heating and shaping of said composite material;

(m) pressing said composite material against said support member in a mold configured to heat and shape said composite

material to effectuate at least partial contact between said composite material and said support member; and

heating and shaping said composite material;

(n) at least one of: said composite material and said frame structure, comprises one of: an air conducting surface and an air-permeable surface;

(o) said composite material comprises an air-permeable, particle-foam, structural molded part;

(p) one of: (i) and (ii), wherein (i) and (ii) comprise:

(i) positioning said composite material in an automatic molding machine having a mold cavity,

filling said mold cavity with foam particles, and

steaming said foam particles and welding said foam particles to one another and to said composite material by steaming; and

(ii) positioning said composite material in an injection molding mold having a mold cavity, and

injecting one of: (1) and (2), wherein (1) and (2) comprise:

(1) molten plastic capable of welding to said composite material, and

(2) a melt, containing a foaming agent, capable of welding to said composite material into the mold cavity;

(q) said composite material comprises weldment locations, and further comprising the step of preheating of the weldment locations at the composite material to effectuate joining to said support member;

(r) heating and shaping said composite material to effectuate embossing of said first side of said second element to provide the appearance of leather, said heating comprising heating said composite material to the embossing temperature of said composite material; and

(s) one of: (1) and (2), wherein (1) and (2) comprise:

(1) adhering said composite material to said support member, and

(2) heating and shaping of said composite material, are effectuated in a mold, said mold comprising at least one of: (i), (ii), (iii), (iv), (v), and (vi), wherein (i), (ii), (iii), (iv), (v), and (vi) comprise:

(i) a porous mold,

(ii) a mold with perforations,

(iii) a mold made of at least one of: a porous resin, a pore-resin, a metal, and a sintered metal,

(iv) a mold manufactured from one of: (a) and (b), wherein (a) and (b) comprise:

(a) a mother mold, and

(b) a semifinished mold body that is shaped by removal of material to configure a fully finished mold body,

(v) a mold in which said composite material is held by one

of: (a) and (b), wherein (a) and (b) comprise:

(a) a sleeve-type structure having inner dimensions that correspond to the outer dimensions of said composite material, and

(b) a spectacle-type structure having inner dimensions that correspond to the outer dimensions of said composite material,

(vi) a divisible mold with one of: (a) and (b), wherein (a) and (b) comprise:

(a) a sleeve-type structure arranged in the separating region of the divisible mold and at the mold component that is located at the viewable side of said composite material, and

(b) a spectacle-type structure arranged in the separating region of the divisible mold and at the mold component that is located at the viewable side of said composite material.

16. The method of making a structure according to claim 15, and comprising:

foaming said first element with a foaming agent;

said foaming agent having a hydrocarbon content that is one of: about 50% by weight in relation to the total amount of foaming agent and more than about 90% by weight in relation to the total amount of foaming agent.

17. The method of making a structure according to claim 16, wherein:

- said foaming agent comprises a foaming gas;
- said foaming gas comprises an inert gas;
- said inert gas having a content of up to 25% by weight in relation to the total amount of foaming gas;
- said foaming gas comprising at least one of: carbon dioxide and nitrogen.

18. The method of making a structure according to claim 17, and further comprising:

forming at least one of: (i) and (ii), wherein (i) and (ii) comprise:

- (i) molding said second element with at least one bent portion that projects away from said first element in the corresponding mold, and

- (ii) forming said composite material with least one bent portion that projects away from said support member.

19. The method of making a structure according to claim 18, and further comprising:

forming, with slides, at least one bent portion.

20. The method of making a structure according to Claim 7, comprising all of (a), (b), (c), (d), (e), (f), (g), (h), (i), (j), (k), (l), (m), (n), (o), (p), (q), and (r), wherein (a), (b), (c), (d), (e), (f), (g),

(h), (i), (j), (k), (l), (m), (n), (o), (p), (q), and (r) comprise:

(a) said forming of said composite material into a predetermined shape comprises heating and shaping of said composite material;

(b) said heating and shaping of said composite material comprises embossing said first side of said second element to provide the appearance of leather to said first side of said second element;

(c) said forming of said composite material into a predetermined shape further comprises molding of said composite material in a mold;

(d) said molding comprises shaping at least a portion of said second element into a bent portion;

(e) said first element comprises an extruded, non-crosslinked, polypropylene, foam having a melt strength of at least 5 centi-Newtons, at a temperature of 200 degrees Celsius, at an output of 1 cubic centimeter per minute, while pressing a polypropylene melt from a container into a nozzle that has an opening width of 1 millimeter and a length of 20 millimeters, grasping and removing a polypropylene melt strand with increasing acceleration from the nozzle while measuring the tensile force until tearing off the strand of polypropylene;

(f) said second element comprises at least one of:



polypropylene, a thermoplastic polyolefin, a textile material, a woven material, and a fleece material;

(g) said second element having a weight of at least 120 grams per square meter;

(h) at least one of: said first element and said second element comprises greater than about 5% solid by weight;

(i) said first element comprises at least one of: (i), (ii), and (iii), wherein (i), (ii), and (iii) comprise:

(i) high melt strength polypropylene,

(ii) a mixture of polypropylene copolymer and polypropylene homopolymer, said mixture comprising polypropylene in the range of from about 5% to about 70% by weight based on the total amount of plastic, and

(iii) substantially only polypropylene homopolymer;

(j) said first element has at least one of: (i), (ii), (iii), (iv), (v), (vi), and (vii), wherein (i), (ii), (iii), (iv), (v), (vi), and (vii) comprise:

(i) a cell size of from about 0.4 to about 4 millimeters,

(ii) a cell size of from about 0.5 to about 1.5 millimeters,

(iii) a thickness of from about 0.5 to about 10 millimeters,

(iv) a thickness of from about 2 to about 4 millimeters,

(v) a specific gravity of from about 20 to about 400 kilograms per cubic meter, and

(vi) a specific gravity of from about 30 to about 150 per cubic meter, and

(vii) a melting point of one of: (1) and (2), wherein (1) and (2) comprise:

- (1) greater than about 155 degrees Celsius, and
- (2) greater than about 165 degrees Celsius;

(k) said second element of said composite material has a heat resistance of from about 140 to about 180 degrees Celsius;

(l) said first element comprises an extruded, one-piece, foam having a predetermined thickness;

(m) said composite material has a resistance to remelting at a temperature of from about 155 to about 165 degrees Celsius;

(n) one of: (1), (2), (3), (4), (5), (6), (7), (8), (9), (10), (11), (12), (13), (14), and (15), wherein (1), (2), (3), (4), (5), (6), (7), (8), (9), (10), (11), (12), (13), (14), and (15) comprise:

(1) joining said second attachment side of said first element and said second, attachment, side of said second element of said composite material to one another upon heating to a temperature that is at most about 20 degrees Celsius below the melting temperature of said composite material to effectuate one of: laminating and welding,

(2) applying said first element directly as a foam onto said second element of said composite material,

(3) extruding said second element onto said first element,

(4) moving said first element against a heated second element by one of: prior to calendering and after calendering,

(5) adhering said composite material to said support member by one of: molding, laminating, and welding,

(6) one of: (a) and (b), wherein (a) and (b) comprise:

(a) heating and shaping said composite material prior to adhering said composite material to said support member, and

(b) heating and shaping said composite material while adhering said composite material to said support member,

(7) heating and shaping said composite material in a mold that is subjected to at least one of: a positive pressure and a negative pressure;

(8) heating said composite material to one of: (i), (ii), and (iii), wherein (i), (ii), and (iii) comprise:

(i) the shaping temperature of said composite material,

(ii) the welding temperature of said composite material, and

(iii) the laminating temperature of said composite material,

said heating comprising one of: (1) and (2), wherein (1) and (2) comprise:

(1) heating said composite material in a furnace within the corresponding mold, and

(2) heating said composite material in a furnace exteriorly of the corresponding mold,

(9) heating and shaping said composite material, and further heating said composite material to one of: (1) and (2), wherein (1) and (2) comprise:

(1) the welding temperature of said composite material, and

(2) the laminating temperature of said composite material,

said further heating comprising using heat generated during said heating and shaping of said composite material,

(10) pressing said composite material against said support member in a mold configured to heat and shape said composite material to effectuate at least partial contact between said composite material and said support member, and

heating and shaping said composite material,

(11) at least one of: said composite material and said frame structure, comprises one of: an air conducting surface and an air-permeable surface,

(12) one of: (i) and (ii), wherein (i) and (ii) comprise:

(i) positioning said composite material in an automatic molding machine having a mold cavity,

filling said mold cavity with foam particles, and steaming said foam particles and welding said foam particles to one another and to said composite material by steaming, and

(ii) positioning said composite material in an injection molding mold having a mold cavity, and

injecting one of: (1) and (2), wherein (1) and (2) comprise:

(1) molten plastic capable of welding to said composite material, and

(2) a melt, containing a foaming agent, capable of welding to said composite material into the mold cavity,

(13) said composite material comprises weldment locations, and further comprising the step of preheating of the weldment locations at the composite material to effectuate joining to said support member,

(14) heating and shaping said composite material to effectuate embossing of said first side of said second element to provide the appearance of leather, said heating comprising heating said composite material to the embossing temperature of said composite material, and

(15) one of: (1) and (2), wherein (1) and (2) comprise:

(1) adhering said composite material to said support member, and

(2) heating and shaping said composite material, are effectuated in a mold, said mold comprising at least one of: (i), (ii), (iii), (iv), (v), and (vi), wherein (i), (ii), (iii), (iv), (v), and (vi) comprise:

(i) a porous mold,

(ii) a mold with perforations,

(iii) a mold made of at least one of: a porous resin, a pore-resin, a metal, and a sintered metal,

(iv) a mold manufactured from one of: (a) and (b), wherein (a) and (b) comprise:

(a) a mother mold, and

(b) a semifinished mold body that is shaped by removal of material to configure a fully finished mold body,

(v) a mold in which said composite material is held by one of: (a) and (b), wherein (a) and (b) comprise:

(a) a sleeve-type structure having inner dimensions that correspond to the outer dimensions of said composite material, and

(b) a spectacle-type structure having inner dimensions that correspond to the outer dimensions of said composite material,

(vi) a divisible mold with one of: (a) and (b),

wherein (a) and (b) comprise:

(a) a sleeve-type structure arranged in the separating region of the divisible mold and at the mold component that is located at the viewable side of said composite material, and

(b) a spectacle-type structure arranged in the separating region of the divisible mold and at the mold component that is located at the viewable side of said composite material;

(o) foaming said first element with a foaming agent;

said foaming agent having a hydrocarbon content that is one of: about 50% by weight in relation to the total amount of foaming agent and more than about 90% by weight in relation to the total amount of foaming agent;

(p) said foaming agent comprises a foaming gas,

said foaming gas comprises an inert gas,

said inert gas having a content of up to 25% by weight in

relation to the total amount of foaming gas,

said foaming gas comprising at least one of: carbon dioxide and nitrogen.

(q) forming at least one of: (i) and (ii), wherein (i) and (ii) comprise:

(i) molding said second element with at least one bent portion that projects away from said first element in the corresponding mold, and

(ii) forming said composite material with least one bent portion that projects away from said support member; and

(r) forming, with slides, said at least one bent portion.